




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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,316	07/30/2001	Minoru Waki	010974	8006
23850	7590	02/19/2004	EXAMINER	
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006			SHOSHO, CALLIE E	
			ART UNIT	PAPER NUMBER
			1714	

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/916,316	Applicant(s) WAKI ET AL. 	
	Examiner Callie E. Shosho	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

**Claim Rejections - 35 USC § 103**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-3, 5-8, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (U.S. 6,274,646) in view of Ohta et al. (U.S. 5,954,866) and EP 892024.

The rejection is adequately set forth in paragraph 3 of the office action mailed 7/18/03 and is incorporated here by reference.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. in view of Ohta et al. and EP 892024 as applied to claims 1-3, 5-8, and 10-11 above, and further in view of Zhu (U.S. 5,889,083).

The rejection is adequately set forth in paragraph 4 of the office action mailed 7/18/03 and is incorporated here by reference.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. in view of Ohta et al. and EP 892024 as applied to claims 1-3, 5-8, and 10-11 above, and further in view of either Sacripante et al. (U.S. 6,329,446) or Cheng et al. (U.S. 6,239,193).

The rejection is adequately set forth in paragraph 5 of the office action mailed 7/18/03 and is incorporated here by reference.

**Response to Arguments**

5. Applicants' arguments and 1.132 declaration filed 11/17/03 have been fully considered but they are not persuasive.

In the office action mailed 7/18/03, examiner noted that Watanabe et al. disclose ink jet ink comprising copolymer obtained from methyl methacrylate, butyl acrylate, and acrylic acid and dispersant which is copolymer obtained from styrene and maleic acid, but that there was no disclosure in Watanabe et al. of copolymer obtained from styrene and maleic anhydride as required in the present claims.

In order to meet the requirements regarding the presently claimed styrene-maleic anhydride copolymer, Watanabe et al. was combine with Ohta et al. given that Ohta et al. disclose equivalence and interchangeability of styrene-maleic acid dispersant and styrene-maleic anhydride dispersant.

In the amendment filed 11/17/03, applicants argue that nowhere does Ohta et al. disclose that styrene-maleic acid copolymer and styrene-maleic anhydride copolymer are equivalent and that they are only interchangeable when used in the ink of Ohta et al.

However, as stated above, Watanabe et al. disclose use of styrene-maleic acid dispersant and further state that the dispersants utilized are those commonly used in the preparation of pigment dispersion (col.3, lines 2-4). Ohta et al., which is also drawn to ink jet ink, disclose the use of "known" dispersants used in the preparation of "known" pigment dispersion (col.5, lines 30-34) and disclose that such dispersants include both styrene-maleic acid copolymer and styrene-maleic anhydride copolymer.

Thus, it is clear that styrene-maleic acid copolymer and styrene-maleic anhydride copolymer are equivalent and interchangeable in that both function as dispersants and both are types of known dispersants used in known pigment dispersions for ink jet inks. Further, given that Ohta et al. disclose that the dispersants utilized are those which are commonly used in pigment dispersions, it is clear that both styrene-maleic acid copolymer and styrene-maleic anhydride copolymer are known to function as dispersants in inks other than that of Ohta et al.

As evidence to support their position that styrene-maleic acid copolymer and styrene-maleic anhydride copolymer are not equivalent, applicants have submitted 1.132 declaration on 11/17/03. In the declaration, inks within the scope of the present claims, i.e. comprising copolymer obtained from methyl methacrylate, butyl acrylate, and acrylic acid and copolymer obtained from styrene and maleic anhydride, is compared with ink outside the scope of the present claims but within the scope of Watanabe et al. and Ohta et al., i.e. comprising copolymer obtained from methyl methacrylate, butyl acrylate, and acrylic acid and copolymer obtained from styrene and maleic acid. It is shown that the inks of the present invention are superior in terms of storage stability and discharge stability.

However, the declaration is not successful in establishing unexpected or surprising results over the cited prior art given that the declaration does not compare ink of present invention with ink of closest prior art. That is, the declaration compares ink comprising styrene-maleic anhydride that is half-esterified with ink comprising styrene-maleic acid. However, Ohta et al. disclose the equivalence and interchangeability of styrene-maleic anhydride with styrene-maleic acid not the equivalence and interchangeability of styrene-maleic anhydride half-esterified with styrene-maleic acid. While the declaration shows that ink comprising styrene-maleic anhydride

which is half-esterified is superior compared to ink comprising styrene-maleic acid, there is no evidence that ink comprising styrene-maleic anhydride which is not half-esterified, as disclosed by Ohta et al., is superior to ink comprising styrene-maleic acid.

Applicants also argue that EP 892024 does not teach acid number of styrene-maleic anhydride copolymer.

While there is no explicit disclosure of styrene-maleic anhydride copolymer, EP 892024 does disclose that dispersants suitable for ink jet inks have acid number of 100-250 in order to produce image with higher color density and to prevent color bleed and that these dispersants include those made from monomers including styrene and maleic anhydride. While there is no explicit disclosure in EP 892024 that the dispersant is a copolymer, it is noted that all the examples utilize dispersants that are copolymers. Thus, one of ordinary skill in the art would have recognized that dispersants obtained from at least two of the disclosed monomers is within the scope of EP 892024. Thus, it is clear that the dispersant disclosed by EP 892024 clearly encompasses styrene-maleic anhydride as required in the present claims.

Given that EP 892024 discloses the use of dispersants including styrene-maleic anhydride copolymer having specific acid number, it therefore would have been obvious to one of ordinary skill in the art to use such dispersant in the ink jet ink of Watanabe et al.

**Allowable Subject Matter**

6. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 12 would be allowable if rewritten in independent form as described above given that there is no disclosure in either Watanabe et al. (U.S. 6,274,646) or Ohta et al. (U.S. 5,954,866) of ink comprising copolymer obtained from styrene and maleic anhydride where the copolymer is half-esterified.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

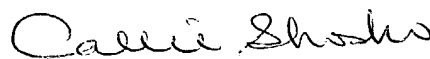
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
2/13/04